

those embankments might be maintained which were productive of good or at least not harmful. Many embankments, it was found, were maintained simply because they were in charge of Government in 1881, and not because they were supposed to be of any real use to the country; in some cases there is no doubt that they were actually harmful, though they might afford some protection to particular places; and other embankments, though still nominally borne on the list, had already been practically abandoned, as the country they were supposed to protect was covered by the works constructed in connection with the canals. As a result of this examination, many embankments were abandoned; and Government now maintains under Act XXXII of 1855, 215 miles of embankments situated along the banks of the large rivers, which protect an area of about 1,000 square miles, while embankments extending over 265 miles are kept up in connection with the canals, which protect an additional area of 844 square miles. Vast sums have been expended from time to time on the maintenance of the embankments; from 1803 to 1830 over 8 lakhs was expended, of which half may be debited to Cuttack; from 1830 to 1866 over 7½ lakhs was spent in Cuttack alone, and in the next 30 years the expenditure amounted to 19 lakhs.

How grave the danger of inundation used to be may be realized from the fact that in 1857 it was proposed to remove the cantonment, civil station and town of Cuttack to the left or north bank of the Mahānadī and to throw its site open to flood. Even at the present day it is impossible to assert that the embankments, as a whole, can withstand extraordinary floods or that the measures taken have been effectual in restoring the equilibrium of the river channels generally. On the other hand, there is no question that, in spite of these defects, they have proved of immense value to the district generally. Formerly the cottages used to remain under water for long periods during the rainy season, and the ryots had to remove themselves and all the moveable property they could take to the adjacent high lands or to the hills. There they had to wait patiently until the waters subsided, and then came down and repaired their houses. The canals have, to a great extent, put a stop to this, as their high embankments stand as a barrier to prevent the overflow of the water. Striking evidence of the protection now secured is afforded by the records of the high floods which have from time to time swept down on the district. The great flood of 1855 submerged nearly the whole country, such it did not rise beyond 123·48 on the Lālāch

Value
of the
embank-
ments.

inundation, when the highest level reached on the Bellevue gauge was 125.50, a flood of similar height in 1895 caused very little damage.

CANALS.

History of
the canals.

While embankments have existed from the earliest times in Cuttack, canals date from a comparatively late period in the history of the district. The first proposal to employ the rivers of Orissa for irrigation came from General Sir Arthur Cotton, who was deputed to visit the Province in 1858 with the object of giving advice as to the control of the flood waters of the Mahānadi. He recommended the construction of a complete system of irrigation and navigation canals, following the principles then being carried out in the deltas of the Godavari and Kistna. He estimated that an area of 2½ millions of acres might thus be irrigated, and that navigation might be opened up between Orissa, Midnapore and Calcutta, for a sum of 130 lakhs. Here, as elsewhere, Sir Arthur Cotton attached special importance to making the canals navigable, and pointed out how completely Orissa was cut off from the rest of India, destitute as it was of roads, railways or harbours, and traversed by a succession of formidable and unbridged rivers. In 1860 the East India Irrigation and Canal Company was formed for the purpose of carrying out the works in Orissa, and water was first supplied for irrigation in 1865. The works, however, were not sufficiently advanced to be of any real use in the terrible famine of 1866, though they supplied an excellent form of relief labour in the distressed districts. Before this it had become evident that the original estimate would be largely exceeded; and as the Company found it difficult to raise further funds, the Government of India purchased the whole of the works for the sum of 109 lakhs, and in 1869 the Company ceased to exist.

From the first irrigation in Orissa made very slow progress. The works, however, proceeded, and in 1873 it was decided to provide for an irrigable area of 1,140,000 acres in Orissa, at an estimated cost of 441 lakhs. This area was to include 500,000 acres in the Balasore and Puri sections of the scheme, which had not then been put in hand and were soon after abandoned. The works sanctioned included the Taldanda and Māchgaon canals for the irrigation of the lands between the Mahānadi and Kātjurī rivers; the Kendrapāra and Patāmundaī canals for the irrigation of the area between the Chitartala and the Birūpa and three ranges of the High Level canal for the irrigation of the strip of country lying at the foot of the hills from Cuttack to Phadrakh. By 1874 the greater part of this scheme was

and Māchgaon canals and for the construction of new distributaries, bringing up the total estimate to Rs. 3,23,00,000, of which Rs. 2,02,00,000 had already been expended. The project then approved has been completed, and besides this the Māchgaon canal has been extended to the village of Nāgpur, one additional canal, with a total length of 7 miles, has been constructed from the junction of the Baitarānī and Burha to Jājpur, and a number of distributaries have been added. A channel, known as the Dudhai canal, taking off from the north end of the Brāhmanī weir, has also been recently constructed. It has been completed for 36 miles out of a sanctioned length of 46 miles, and is intended to irrigate about 12,000 acres of spring rice in the area between the Brāhmanī and Kharsuā rivers.

The general plan of the works is as follows. Near the point where each river bifurcates on debouching into the plains, a weir is constructed across the head of each branch, partly for the purpose of retaining the water at a suitable level for irrigation, and partly in order to distribute the flood discharge in suitable proportions between the different branches. From the flanks of these weirs marginal embankments run, if necessary, both up and down stream, so as to confine the floods to the river channels, and from the same points are led off the canals which conduct the water to the lands below. Provision is made by means of a network of smaller branch canals for the distribution of the water to the areas commanded. These channels, called distributaries, lead the water to within a certain distance of each village; and the more detailed distribution of the supply to the lands of each village is made by still smaller branches, termed village channels. The system now includes 315 miles of main canals and 1,167 miles of distributaries, including minor or village channels, of which all but 18 miles of canals and 65 miles of distributaries and minor channels lie in this district. The canals themselves branch off from Cūttaek to the north, south and east, so that the four sides of the delta thus covered enclose a square, of which the northern boundary is the Baitarānī, the western the High Level canal, the southern the Māchgaon canal and the eastern the Bay of Bengal, while the Kendrāpāra canal may be said to form the diagonal of the square.

Canal system.

The system derives its supply from seven great weirs with an aggregate length of $3\frac{1}{2}$ miles, which, with the canal head sluices and entrance locks, constitute one of the most extensive systems of canal head works in India. Three of these weirs have been built in order to utilize and control the huge water-supply of the Mahānadi, viz., the Narāj, Mahānadi and Birūpā

Weirs.

weirs; and the other four weirs are on the Brāhmanī and Baitaranī. The Narāj weir, which was constructed on the line of the old stone spur already mentioned, leaves the right bank of the Mahānadi below Narāj and runs obliquely down stream for a length of 3,833 feet until it meets the dividing embankment, which was originally intended to connect it with the island on which Cuttack stands. The Mahānadi weir runs across the head of the main branch of the Mahānadi at Jobra immediately below Cuttack, and supplies water to the Taldanda canal and its branch, the Māchgaon canal. It has a length of 6,349 feet between its abutments and is pierced with two sets of scouring sluices, one of which has been placed at the south end of the weir, in order to prevent any accumulation of sand in front of the head sluices of the canal and the entrance to the Jobra look, while the other is situated near the centre of the work, and serves the purpose of keeping a deep water-channel open for navigation in the pool above the weir. The Birūpā weir is situated on the river of that name about $1\frac{3}{4}$ miles below its head; its length is 1,980 feet between abutments; and it is furnished with two sets of under-sluices, and supplies water to the Kendrāpāra canal system and the High Level canal, Range I. All these three weirs were constructed in a similar manner, and consist of a body wall of masonry, founded upon wells sunk into the sandy bed of the river, which is protected on the up-stream and down-stream sides by means of aprons of dry stone. The other four weirs are the Brāhmanī and Patiyā weirs on the Brāhmanī, and the Baitaranī and Burha weirs on the Baitaranī, the Baitaranī weir being in the Balasore district. They are intended to supply water to the second and third Ranges of the High Level canal, the Jāipur canal, and to the Dudhai canal on the left of the Brāhmanī; the Brāhmanī weir has a length of 4,000 feet and is situated at Jenāpur at the outfall of the first range, while the Patiyā weir, which has a length of only 783 feet, has been built on the Patiyā, immediately below the outfall of the Genda Nullah, at the head of the High Level canal, 2nd Range.

Main
canals.

The canals which obtain a supply of water for irrigation and navigation from these seven weirs are—(1) The High Level canal, with one branch running to Jāipur and the other to Bhadrakh in the Balasore district. (2) The Kendrāpāra canal, with its extension to Jambu and two branches called the Gobri and Patāmundaī canals; besides these, another canal, called the Gobri Extensio canal, is supplied with water from the Kendrāpāra canal by means of the Patāmundaī canal. (3) The Taldanda canal, with its branch, the Māchgaon canal. Of the two main sections into whi

the district is divided by the rivers which traverse the delta, the tract between the main stream of the Mahānadi and the Brāhmani irrigated by the Patāmundai canal on the north, and the endrāpāra canal on the south, the Gobri canal forming a connecting link between them to the east. Both these systems draw their supply of water from the south flank of the anicut across the Birūpā, which also feeds the High Level canal. The anicut across the main branch of the Mahānadi feeds the Tāldanda and Māchgaon canals, which water the northern and southern edges of the tract between the Mahānadi and Kātjuri. All these canals maintain a high level along the banks of the rivers, which are always higher than the intermediate alluvial tracts.

The High Level canal.

The High Level canal was designed to provide a navigable trade route between Cuttack and Calcutta, and also to irrigate the country through which it passes. It starts from above the left flank of the weir across the Birūpā, $1\frac{1}{2}$ miles below the departure of that river from the main stream of the Mahānadi, and runs thence along the foot of the hills north-eastwards, through the Cuttack and Balasore districts. The original scheme was to carry the canal across the district of Midnapore to meet the Hooghly River at Ulubāria, below Calcutta, a total distance from the starting-point of 230 miles, so as to connect Cuttack with Calcutta by one long canal. This great scheme has however been abandoned, and only three ranges have been completed, of which the first and second, covering a total distance of $45\frac{1}{2}$ miles, lie within this district, viz., Range I from the Birūpā to the Brāhmani river, 33 miles long, and Range II from the Brāhmani to the Baitarani river, a distance of $12\frac{1}{2}$ miles. The two ranges command an aggregate area of 57,495 acres, of which about half is actually irrigated. The High Level canal is the most picturesque of all the canals of Orissa, skirting the base of the wooded hills along the western boundary. The traveller looks eastward over almost boundless rice plains, the level surface of which is broken only by a few hills that here and there rise steeply from the surrounding country; while to the west is a vista of range upon range of jagged hill and valley in endless confusion.

The Jāipur canal, starting from the head-works at the point of confluence of the Baitarani and Burha, runs $6\frac{1}{2}$ miles to the town of Jāipur. It has a discharge of 600 cubic feet per second and commands 70,000 acres. It is one of the youngest members of the Orissa system, and secures from drought the valuable rice-growing lands lying in the tract between the Baitarani and Burha, where formerly the low-lying villages could only be watered with brackish water from the creeks.

The Kendrāpāra canal.

The Kendrāpāra canal, which was opened in 1869, is the oldest and most important canal in the district. Taking off from the Birūpā river at Jagatpur just above the anicut, it skirts the northern bank of the Mahānadi and its tributary the Nūn, running nearly due east to Mārsāghāi, up to which point it is navigable. It has a total length of 39 miles and a discharge of 1,067 cubic feet per second. The area commanded by it is 106,159 acres, and 23 distributaries are capable of watering 62,432 acres. It irrigates the country between the Mahānadi and the Gobri drainage channel, its right bank forming a protective embankment as well as thoroughfare for the people. The country it commands comprises some of the most highly assessed *parganas* in the district. The Kendrāpāra Extension canal is a continuation of it, which runs between Mārsāghāi and the Jambu river, a distance of about 15 miles. It was originally constructed with the object of improving communications between Cuttack and False Point harbour, into which the Jambu flows, but it is also capable of supplying water for irrigation purposes to a small area.

The Gobri canal is a branch of the Kendrāpāra canal from which it takes off in the 28th mile. It has a total length of 15 miles and commands 18,850 acres, but the distributaries constructed can only irrigate 6,599 acres. It was originally intended to be a distributary of the latter canal, but was afterwards made navigable in order to facilitate communication between Cuttack and Chāndbāli, and it now forms part of the main route between the two places. The Gobri Extension canal is only 6 miles long but commands an area of 12,717 acres, of which, however, only 5,174 acres can be irrigated by the distributaries constructed. It derives its water-supply from the Patāmundai canal, and forms the connecting link between the terminus of the Gobri canal and the Gandākiā river and the Brāhmanī at Alba.

The Patāmundai canal branches off from the Kendrāpāra canal just below the Birūpā head-works, and skirts the southern bank of that river and of the Brāhmanī river for a total length of 48 miles. It has a discharge of 885 cubic feet per second and commands an area of 54,800 acres, its distributaries being capable of irrigating 19,838 acres. It is provided only with weirs and is therefore impracticable for navigation; but it irrigates some of the richest lands in Orissa, and its left bank protects a large tract from the floods of the Birūpā and Brāhmanī rivers.

The Tāldanda canal.

The Tāldanda canal starts from the right bank of the Mahānadi immediately above the anicut at Jobra and runs in a southerly-eastern direction to Birbāti, where it gives off the Māchgaon branch. Thence it runs along the southern bank of the Sukpaikā and

Mahānadi for a total length of 52 miles. It has a discharge of 1,342 cubic feet per second, of which about half is taken off by the Māchgaon canal, and it commands 42,939 acres. It was designed for the purpose of irrigating the triangular tract of country between the Mahānadi and Kātjurī; but it is navigable by boats of a considerable size, and provides an alternative route from Cuttack to Chāndbāli *via* the Hansua creek.

The Māchgaon canal leaves the Tāldanda canal 7 miles south of Cuttack, and runs along the north bank of the Kātjurī and of its branch, the Alanka, for a distance of 32 miles; it has a discharge of 776 cubic feet per second and commands about 120,000 acres. It was originally intended to carry this canal as far as Māchgaon so as to run into the tidal water of the Devī river and thus establish connection with the sea, but this scheme was never carried out. It stops 6 miles short of Māchgaon, and there does not appear much probability that it will be extended to the termination at first proposed.

When the project was first mooted, the most sanguine expectations were entertained as to the revenue the canals would yield; and in 1867 the Directors of the East India Irrigation and Canal Company estimated that the scheme would eventually return a net income equal to 21 per cent. of the outlay. These hopes soon proved delusive. It was found that the receipts did not cover the working expenses, while the interest on the loan steadily accumulated and quickly amounted to a sensible addition to the capital outlay. The hopes of a steadily increasing demand for water were dispelled, and though the outlay was very large, the incomings were insignificant. Six years after water was first offered to the people, irrigation was as far from general adoption as it was at first. By steadily refusing the water on the terms originally offered, the peasantry succeeded in beating down the rate, and the use of canal water then gradually extended. The works have, however, never been a success financially, and even up to the present day the outlay has proved unremunerative. The average annual working expenses for the five years ending in 1900-01 were Rs. 4,91,830 and the average gross revenue from all sources was Rs. 4,67,913, so that the working expenses were not covered. In the last two years the position has improved a little, as the receipts exceeded the working expenses by Rs. 14,644 in 1902-03 and by Rs. 5,310 in 1903-04; but the total net revenue realized up to the end of the last year amounted to only 0·17 per cent. of the capital outlay, the total capital cost, exclusive of interest charges, was Rs. 2,65,62,647, and the interest alone amounted to Rs. 89,72,164.

Various causes have combined in falsifying the expectations which were originally entertained. The cost of the work was greater than was expected, the area under irrigation has not come up to the early forecasts, the navigation receipts have never been large, and the rates charged for irrigation are decidedly low. As already stated, Sir Arthur Cotton estimated that $2\frac{1}{4}$ millions of acres might be irrigated, whereas the average area is only about 200,000 acres. His estimate was doubtless a very rough one; and it probably included every acre of land within the Mahanadi delta and in the tract to be commanded by the Midnapore canal, without reference to the question whether it was cultivable or would take water. The areas shown in the revised project of 1873 again were estimated on the assumption, for which there was little warrant, that 500 acres in every square mile would be irrigated, so that the gross area commanded in Orissa would have been 1,140,000 acres, or 820,000 acres excluding the Puri and Balasore sections. The area actually commanded by the present system of distributaries is estimated at 528,534 acres, of which only 274,625 acres, or about 333 acres per square mile commanded, are irrigable; all of this is practically confined to this district, in which the culturable area commanded is 468,414 acres, of which 231,028 acres are irrigable. The balance is either uncultivable, or lies too low to take irrigation or too high to be irrigated otherwise than by lift, and lift irrigation is hardly practised at all. It is doubtful therefore whether the average area that can be irrigated by present canals will ever exceed 250,000 acres, though there is no difficulty in regard to the water supply, which is generally sufficient for all the land which is ever likely to take irrigation.

Those who enthusiastically quoted the success of irrigation in the Madras deltas seem to have forgotten that in those tracts rainfall does not exceed 40 inches, whereas in Orissa it amounts to 60 inches per annum. The normal rainfall being ample, the value of canal irrigation is exceptionally dependent on the character of the season; and the ryots do not consider canal irrigation so absolutely indispensable as to make it worth their while to pay anything but a small water-rate or to have all their land irrigated. Nothing shows more clearly why the canals have fallen so short of the expectations of revenue which were at first so general than the way in which the area under irrigation has varied and the people have refused to pay high water-rates. The question of rates to be charged for water does not appear to have been considered at the time that the Company was formed; but when the works were taken over by Government in 1868, a scale of rates was notified which in practice proved to be prohibitive, viz.,

per acre for sugarcane, Rs. 5 for certain other crops and Rs. 3 for any single crop not remaining more than six months in the ground. The people declined to pay such high rates, and were also afraid that irrigation would be made an excuse for enhancing the rents and revenue. To allay their apprehensions, a proclamation was issued by Government, declaring the water-rate to be wholly distinct from land revenue, and promising that at the next revision of the settlement no increased rate of assessment would be imposed on any lands by reason only of their being irrigated. These promises failed to produce much effect, and a much more effective inducement to take water was afforded by the gradual reduction of the rate to Re. 1-8 per acre. As a result of this measure, irrigation increased slowly, but on the whole steadily, and by 1876-77 there were 30,000 acres watered from the canals. There was then a great demand for the privilege of irrigation due to the high prices and scarcity of water in 1878, the year of the Madras Famine, and to the introduction of the system of five year and one year leases. The area under irrigation rose suddenly to 98,000 acres, and increased to 133,000 acres in 1882-83. In 1883, however, there was a drop to 48,760 acres, as most of the leases expired and the people refused to renew them. The reason for this appears to be that in the eyes of the cultivator the chief value of the water is not in any improvement it may render possible in the outturn of an ordinary year, but in the protection it affords in year of drought. This being so, the peasants are always disposed to put off renewing their engagements till a period of drought occurs; and this tendency was accentuated by the fact that in three out of every preceding five years the rainfall had been sufficient and timely, and consequently the benefit derived from the canal irrigation had been comparatively small. They soon began however to realize that the loss of their crops from drought more than counterbalanced the saving of the water-rate; the area slowly extended, and with the next quinquennial period a much larger number of leases were executed, and the maximum of 186,627 acres was reached in 1889-90. A few years of abundant and excessive rainfall brought the irrigated area down to 119,460 acres in 1896, when the drought created an universal demand for water, and the irrigated area rose at a bound to 207,015 acres. Since that year it has increased but little; the average area irrigated in the three years ending in March 1903 was 210,012, the maximum of 225,000 being reached in 1902-03; and in 1903-04 the area supplied was 210,161 acres.

A very large sum was expended in making the canals first class Navigation lines, as great importance was attached to this source of irrigation.

of income. It was confidently expected that there would be large traffic along these waterways, and that the receipts from tolls would give the State a profitable return for the money spent on them. It might, indeed, reasonably have been expected that, if navigation could be a success anywhere, it would be in Orissa. The country was in a terrible state of isolation without internal and external communications, and it was naturally anticipated that the canals would attract all the local trade and form cheap routes connecting all parts of the country. It is clear however that, after 30 years of a very fine system of navigable canals the people have not taken to navigation. Carts and pack-bullocks still constitute the chief means of transport, and even when canals are available, the people seldom use boats. The navigation receipts have therefore always been an insignificant source of income, and since the opening of the railway they have still further diminished falling from Rs. 1,94,100 in 1897-98 to Rs. 78,153 in 1901-02. The tollage rates have been recently reduced, and the tonnage borne along the canals has increased; but even so the tollage only amounted to Rs. 68,489 in 1903-04, and there does not appear to be any likelihood of navigation ever proving of much value as a source of income.

Canal
adminis-
tration.

This large irrigation system is under the control of a Superintending Engineer, who is assisted by three Executive Engineers in charge of divisions. The latter are responsible for the maintenance of the canals and the conduct of irrigation operations; and a separate establishment is entertained for the collection of the revenue. For this purpose there is a revenue division in charge of a Special Deputy Collector, who sees to the assessment and collection of water-rates under the orders of the Superintending Engineer. The irrigated area is divided into blocks, the lease of all the lands in each block being arranged so as to lapse in the same year, while efforts are made in fixing the period of the lease of these blocks to see that leases for an equal area expire each year. Water is supplied to the cultivators on application on a prescribed form, the year being divided into three seasons, that is the hot weather, from March to June; *khari*, from the 16th June to the end of October, and *rabi*, from November to the end of March. Dates are fixed for each season, and a lease or permit granted for the season is only in force for that particular period. Besides these season leases, there are long-term leases, leases for periods up to ten years, which are granted at a somewhat reduced rate, and secure a supply of water from the 16th to the 31st March in each year. These long-term leases are granted for compact blocks defined by well-marked bound-

of such a nature that the leased lands can be clearly distinguished from the adjoining unleased lands, and also so situated that unleased lands will not be ordinarily irrigated by water supplied for the land included in the block. These boundaries are mentioned in the application for the lease, on receipt of which a special report is submitted to the Executive Engineer. If the lease is approved, that officer issues orders for the block to be measured, and a detailed *khasrā*, or measurement of each cultivator's holding, is then made. The lease is finally approved by the Executive Engineer who issues the permit, but before this can be done, every cultivator who has fields within the block, must sign his name against the area which has been measured, and which will be assessed in his name. In order to admit of a block getting water the first season, a provisional permit is granted for the season the area originally applied for; this permit is cancelled when the long-lease permit is finally granted. Fields which cannot be ordinarily irrigated, or for which canal water is not ordinarily required, can be excluded from the block at the discretion of the Executive Engineer, such fields being duly noted in the *khasrā* or measurement paper. In these long-term leases water-rates are charged for the area measured and accepted by the cultivators, whether water is required or not. In *rabi* and hot-weather leases, water is supplied on application, and water-rates are levied on the actual areas irrigated, and not necessarily on those specified in the application. In order to assist the Canal Department as far as possible in the assessment and collection of water-rates, influential men of the village, called "representatives," are appointed on the approval of the majority of the cultivators concerned. Their duty is to assist in measurements, in procuring and attesting signatures to applications for leases, and in collecting the rates. In return for this work, they are entitled to free irrigation of the lands in their occupation within the leased area up to a limit of 3 per cent. of the area assessed.

The present practice is to give long-term block leases, which can extend to 10 years, but to discriminate between the various classes of land forming a block. Thus lands lying so low that they require irrigation, although water may often flow into them, are excluded from assessment; while a special rate of 8 annas per acre is charged on those lands which derive benefit from irrigation in exceptionally dry years. The rate charged for other land, the ruling rate, was formerly Re. 1-8 per acre, but it was raised to Re. 1-12 in 1902-03. Higher rates are charged for single leases, or for water taken between 1st April and 16th June; the average or all-round rate is about 3 annas less than the

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ruling rate, and it amounted to Re. 1-5 only during the three years ending 1901-02. The long lease system is well suited to these canals, as it tends to prevent loss of revenue in seasons in which irrigation is not required, and it appears to be popular with the cultivators. The fact nevertheless remains that, after many years' nursing of the lease system, it has not been possible to induce the Oriyā cultivator to pay an average rate of more than Re. 1-5 per acre for all the advantages of irrigation and protection from floods which the canals confer on him, and that, even after a revision of settlement, Government has been able to propose a greater enhancement of this rate 4 annas.

Value of
canals.

A fair test of the value of irrigation to a district is to be found in the increase of the rent obtained for the land. On this subject we have fortunately very detailed information in the final report on the survey and settlement of Orissa by Mr. S. L. Maddox, I.C. Mr. Maddox states:—"There is little, if any, evidence of general enhancement of rents on the ground of irrigation or of higher rates in irrigated than in unirrigated villages, though there is evidence that rent-rates have risen more in the protected and irrigated tracts than in the unprotected and unirrigated. There is, however, some reason to think that irrigation causes the lowest rents to rise, and in fact has a tendency to equalize rents throughout an irrigated area. The increase of cultivation is certainly no greater in the protected and irrigated group, and all the enquiries made have failed to elicit any evidence of a substantial extension of cultivation to lands which but for the canal water were not likely to have been reclaimed. Amidst the mass of conflicting information on the subject of the increase of rent-rates, one fact alone can be held to be abundantly proved, and that is that the cases in which a zamindār has openly enhanced rents on the ground of the accessibility of canal water or has imposed an irrigation cess of his own are very rare." Elsewhere in India the rents of irrigated land sometimes two or three times those of unirrigated land. Here, however, despite increased crops and assurance against drought, the tenant declines to pay a higher rent, and will only pay a small water-rate for the privilege of irrigation; nor has it been possible to increase this rate at settlement by more than 4 annas. It must be inferred then that the profit due to irrigation has been very small.

It must not, however, be assumed that these canals have no value to Cuttack. Apart from any increase which they have caused in rentals, the canal system is of great value as a security against loss caused by floods and drought. Formerly

landlords' income was precarious because their tenants were liable to failure of crops from these causes. Now there is no such uncertainty, as in the area embanked and provided with distributaries there is protection against devastating floods, and water is available in time of drought for whoever needs it. In the 36 years prior to their construction, 1831-32 to 1866-67, floods sufficiently disastrous to necessitate remissions of Government revenue occurred eight times. The remissions made on this account amounted to over 8 lakhs, and how small a proportion this bears to the total loss suffered in these eight years of disastrous flood may be judged from the fact that in the year 1866, the events of which formed the subject of minute enquiry, the remissions were found to represent only 5 per cent. of the estimated loss. The people, we learn, used to be kept on the alert every year for two or three days and nights waiting for a signal to fly to the highest ground available, and were obliged to see their houses washing down on all sides without having any power to save them. The canal embankments now protect nearly 550,000 acres, and even the greatest floods are powerless to devastate all the country. Immunity from famine is, however, perhaps of even greater value than protection from flood. It appears from the report on the inundations of 1866 that remissions on account of drought, amounting to 14½ lakhs, or about two years' revenue, were granted in Cuttack in five out of the 36 years ending with 1866-67; and as no remissions were granted unless the loss exceeded one-fourth of the produce, it may be accepted that the losses from drought were both more frequent and greater than is suggested by these figures. No such remissions have been necessary since the construction of the canals; and it is certain that if so terrible a calamity as that of 1865 were again to befall Cuttack, the district would be in a far better position to withstand it. To quote the conclusion arrived at by the Indian Irrigation Commission of 1901-03: "there is no urgent need for further famine protection to the plains of Orissa; and indeed there are few parts of India more secure, or in which the value of irrigation bears so small a proportion to its cost."

CHAPTER VII.

NATURAL CALAMITIES.

LIABILITY
TO
NATURAL
CALAM-
ITIES.

THE most difficult problem which the administration in this district has to face is its liability to loss of life and property from natural calamities. The rainfall is in most years ample for its needs, but it is precarious, and its early cessation is fatal to the rice crop on which the people depend. In the deltaic tract which forms the greater part of the district, the difference of level between the high and low-lying lands is so slight that, in the event of any scarcity of rainfall, all parts are equally affected. The low lands are not sufficiently below the level of the up-lands to retain moisture for any considerable time after the rains have ceased, and in years of drought the crops grown on them do not compensate for the loss of those which may be burnt up on the arid higher levels. A drought is, therefore, liable to affect Cuttack more seriously than those districts where the difference of level between the up-lands and the low-lying tracts is sufficient to cause the sterility of the former to be compensated by the increased fertility of the latter. Since the droughts, however, of 1836, 1837, 1842 and 1865-66, all of which caused more or less distress, and the last of which brought on the great famine of Orissa, large irrigation works have been constructed which yield an ample supply of water, so that the district may be now said to enjoy comparative immunity from famine, even when there is a protracted cessation of the rains. As a matter of fact, of late years there has been no ground for any great anxiety on the score of drought, although the deficiency of rainfall has in several years seriously affected the outturn of crops. The area now regarded as liable to famine is 1,295 square miles with a population of 572,500, and it is estimated that the maximum number of persons likely to require relief in the event of a serious famine is 78,000, of whom 62,000 would be provided for by relief works, while 16,000 would require gratuitous relief.

The next great danger to which the district is exposed is that of inundation. The greater part of the tract of country which it occupies is liable to suffer from the floods of the Mahā

Brāhmanī and Baitarani, as the channels of those rivers are insufficient to carry off the great volume of water which comes down after heavy rain from the table-lands of Chotā Nāgpur and the Central Provinces. These floods arise from sudden freshets of the rivers before they enter the district and not from excessive rainfall in it; and though a low flood does little harm, as it is prevented from devastating the country by the embankments, the high floods which sweep across the rice-fields do great damage to the standing crop, as they generally occur in July, August and September, when the rice is in the first vigour of its growth or is in flower or nearing maturity. It sometimes, though fortunately rarely, happens that the district is visited with the double calamity of flood and drought in the same year, the former occurring in the early part and the latter towards the close of the season.

Less frequent but scarcely less serious damage has been caused by storm-waves on the sea face; and though the low lands are to some extent embanked against the sea water, violent cyclones reach the embankments and cause great loss of life and property. These cyclones are fortunately rare; they are generally generated during the transition periods antecedent and subsequent to the full establishment of the south-west monsoon, *i.e.*, during the months of April and May, October and November. Their most striking features are the great barometric depression in the centre and the magnitude of the storm area. These two causes produce a large accumulation of water at and near the centre, which progresses with the storm and gives rise to a destructive storm-wave, when the centre reaches the shelving coast. It then sweeps inland, and the damage caused is terrible and widespread.

Previous to the inception of the great Orissa canal system, FAMINES. droughts and famines were of frequent occurrence. Historical Early famines. records show that terrible famines occurred in the 14th, 15th and 18th centuries, and during the rule of the Marāthās the district suffered grievously from repeated famines. In the memorable famine of 1770 the land lay untilled; rice was not to be had at two seers per rupee; and while the people were dying by hundreds of thousands, the Marāthā soldiery plundered and devastated the country. Four years later another scarcity is said to have occurred, and in Cuttack town rice could scarcely be purchased at 10 annas for the local seer (105 *tolās*). In 1780 the whole country had sunk into such absolute desolation, that there was not a place except Puri and Cuttack which could furnish even a battalion with provisions. In 1792-93 the miserable peasants experienced the horrors of famine; scarcity followed in 1794, and when the district passed into the possession of the

British the condition of the country was wretched. A large portion of the land has been thrown into waste; many of the people had fled to the jungle, and the population was insufficient to till the fields. Under British administration an era of prosperity has ensued: with an improvement in their material resources, the people have displayed far more staying power in bad years; cultivation has extended; and though there have been frequent droughts, they have only once culminated in famine.

Famine of
1865-66.

The years 1806, 1808, 1809, 1817 and 1828 were years of bad crops and scarcity, and in 1836, 1837 and 1842 Cuttack suffered severely from drought; but the only really great catastrophe of the century was the famine of 1865-66. No such calamity had occurred for nearly a century; it had to be dealt with by a body of officials necessarily ignorant of the signs of its approach, unprepared to expect it, and inexperienced in the administration of relief measures; nor were the native inhabitants more aware of what was coming on them than the British officers. The rainfall of 1865 was scanty and ceased prematurely, so that the outturn of the great crop of winter rice, on which the country mainly depends, was reckoned at less than a third of the average crop. Food-stocks were low, both because the quantity exported in 1865 was unusually large and because the people, unaccustomed to precarious seasons, had not retained sufficient stores at home. When the harvest failed, the gravity of the occasion was not perceived and no special inquiries were instituted; while prices long remained so moderate that they offered no temptation to importers and forced no reduction in consumption on the inhabitants, till suddenly the Province was found to be almost bare of food. It was only in May 1866 that it was discovered that the markets were so empty that the jail prisoners and the Government establishments could not be supplied. But the southern monsoon had now begun and importation by sea or land became nearly impossible. Orissa was at that time almost isolated from the rest of India; the only road leading to Calcutta, across a country intersected by large rivers and liable to inundation, was unmetalled and unbridged; and there was very little communication by sea. By great exertions, the Government succeeded in importing about 10,000 tons of food-grain by the end of November; and this was given away gratuitously, or sold at low rates, or distributed in wages to the starving population. But while the mortality among those whom this relief did not reach or reached too late, had been very great; and it was estimated that nearly 1,000,000 persons had died. Though the great famine may be said to have come to an end in November

One new crop began to come into the market, great distress still continued in some parts of the country. The rainfall of the year was so heavy as to cause great floods in the river Mahānadi, and though the harvests in the higher lands were excellent, in all the low lands the crop was drowned. Half the district of Cuttack was thus devastated; in January 1867 forty deaths a day from starvation were reported; and the work of relief had to be taken up again. Altogether about 40,000 tons of rice were imported and lavishly distributed; and about half had been disposed of when the monsoon of 1867, followed by an unusually fine harvest, altogether put an end to the famine in 1868. No complete statistics of the numbers relieved and of the expenditure are available; but the mortality was estimated at one-eighth of the population, and altogether nearly 1½ crores was expended in Orissa during this famine.

The preceding summary of the history of the Orissa famine is condensed from the Report of the Famine Commissioners of 1878, but the catastrophe in Cuttack was so great that a fuller description of the way in which it affected the district seems to be required. The rice crop in the year immediately preceding the total failure of the winter crop of 1865 appears to have been a fairly good one in Cuttack. Even as late as August 1865, prices continued easy, and in that month large purchases were made by a French mercantile house at from 30 to 35 seers per rupee. Though the rainfall of 1865 was below the average, the prospects of the crop seem to have been, on the whole, good up to September; but the last heavy fall took place on the 6th of that month, and after the 18th the rains stopped entirely. Up to October rice continued to be tolerably cheap in Cuttack, the crops were generally promising, and even in the middle of the month people still hoped that a timely fall of rain might save the crop. When, however, the middle of October passed without any sign of rain, alarm became serious, and by the 20th, the whole country was in a panic. The rice trade was stopped; the country ceased to supply the towns, and at Cuttack the bazars were closed. This was the first step taken, which now manifested itself for the first time, and was repeated at intervals throughout the famine; and it was symptomatic of its character, as rather due to scarcity of grain than to scarcity of money, that each fresh accession of alarm immediately took the shape of stopping sales at the regular marts rather than of mere sudden enhancements of price. Some dealers really had no grain; others were unwilling to sell on the old terms, and were afraid to raise the terms too suddenly; the remainder felt themselves unable to meet the demands

History
of the
famine in
Cuttack.

which would have been thrown on them if they had kept their shops open when those of others were closed. Hence the dealer followed one another, and general closing movements took place which were only got over when the supply had accumulated a little and the alarmed public were glad to accept greatly enhanced rates.

By the 6th November the price of common rice in Cuttack was 8 local seers (105 *tolas*) per rupee. Prices steadily increased week by week, and it became apparent that absolute famine must ensue. The irrigation works, by providing employment for thousands of labourers, who were paid partly in money and partly in rice, rendered the distress later in Cuttack than in the neighbouring districts; but even in Cuttack the official returns of the 12th February showed the price of rice from 9 to 7 standard seers per rupee. In April the district began to suffer from actual famine and starvation. The pressure was as yet less in the town than elsewhere; but prices reached 6½ to 5½ seers per rupee, at which rate the people could not long survive, and starving objects began to appear. Several private charities were opened, and there was an old-established public charity; but it was not till the end of the month that the Relief Committee commenced regular operations. The distress was aggravated by the failure of the Irrigation Company's rice which now came to an end; their funds were at the time scanty, they did not import more rice till June; and, meantime, food becoming scarcer and scarcer, the relief afforded by their works was greatly diminished.

It is quite clear that by May there was great starvation and suffering, and considerable mortality in the district, though the mortality in the town was not excessive and there were not the famine scenes witnessed in Balasore. Prices went up to 5 and 6 seers in the latter part of the month, or to about seven times the average price of food; and continuing to rise still higher than this they did not materially fall during the following three months. From the middle of June to the middle of July, the price in the town of Cuttack (when rice could be bought at all) was from 3½ to 3 standard seers per rupee, or eight times the average price, and in most places rice was not to be obtained at all. The popular urban confidence in stocks yet remaining in hand ended in more sudden and complete exhaustion and ruin; in respect of high prices, Cuttack suffered more than any other district station. Rice was dearer for a short time at Balasore than at Cuttack, the most extreme pressure of prices lasted for a longer time at Cuttack than at either Balasore or Puri. Government

works were not opened till late in the famine; but the works of the Irrigation Company employed 9,290 persons on an average in each of the six months ending in June. In January when rice was procurable, the numbers were at their highest (14,666); and from that month till June, employment being freely offered, and more and more needed, the decrease in numbers was solely due to the want of rice to feed the labourers. In the rainy months July and August the work was for the most part stopped by the season. By the end of May, the district was discovered to be in a terrible state of famine. On the 27th May, the Commissioner returning from a tour in the Tributary States found the troops and Government establishments on the point of starvation; and on the 28th he sent a telegram begging Government to import rice for the use of the troops and for the jails, to feed labourers on relief works, and to supply food for the starving. Rice, he announced, was procurable with the utmost difficulty, and then only in insufficient quantities, at $4\frac{1}{2}$ seers per rupee; there were only one day's rations in store for the troops; crime was increasing daily; and all public works and relief works were stopped for want of food. A cargo of 3,000 bags of rice was at once despatched to False Point, but great difficulty and delay was experienced in landing and transporting it; and the greater part of the cargo was not received in Cuttack till early in July. After this, several ships loaded with rice arrived in quick succession, and by the end of September about 10,000 tons of food had been imported. Meanwhile, however, the mortality caused by starvation or by disease, directly or indirectly connected with starvation, want and bad food, was very great. Money was spurned as worthless, and prices were constantly merely nominal. Where rice was to be bought all, as at Cuttack, it reached the rate of five, four and even three seers to the rupee, but in the interior still higher rates prevailed, even to one seer per rupee. Famishing crowds gathered at the feeding-places, and as one officer wrote, "for miles round you heard their yell for food."

In July some centres for the distribution of cooked food were established in the interior, more were established in August, and in September nearly the full number (43) of feeding-places were in operation. Before this, however, the sufferings of the people had been increased by the inundation of all the low-lying lands. The deltaic rivers, swollen by heavy rain, rose to an almost unprecedented height; the embankments were topped and breached in all directions, and the whole of the low-lying country was flooded by an inundation which lasted for an unusual time. The mortality reached its culminating point in the second week of

August, during the heavy rains which preceded and caused these floods. The people were then in the lowest stage of exhaustion; the houseless poor looked in vain for shelter from the rain that penetrated everywhere; the emaciated crowds collected at the feeding-stations had no sufficient shelter, and the cold and wet killed them in fearful numbers. The known deaths from diarrhoea and dysentery and other similar diseases increased greatly, and the unknown deaths must have been still more numerous, for persons could not reach the *annachhatras* or relief depôts, to which alone they looked for support. In most of the low-lying lands, the *biñli* or early rice crop, which would have been reaped in another week or fortnight, was almost entirely destroyed, and the young cold-weather crops suffered much from protracted immersion. Although new relief centres were opened, yet in several cases it was found quite impossible to supply those already opened with rice, owing to the boats from False Point being unable to make way against the powerful current that then came down; and at several centres operations were altogether suspended. The result of this was a great aggravation of the already existing distress; for those who were congregated at the centres found, when the stock of rice ran out, that they were cut off by the floods from other aid, and many died from sheer starvation. In September some relief was afforded not only by the greater extension and better supply of the feeding-centres and sale depôts, but also by the ripening of the small early crop of rice in tracts which had escaped the flood. At best, however, the distress was not but a degree less than before; rice still sold at six, and even fifteen seers for the rupee; and it is questionable whether the results of previous suffering, and the effect of unaccustomed food on those who were much reduced, did not cause the mortality to be almost as great as ever. Many, who had lived so long, died when they received the meals to which they had long been strangers.

Up to the end of September, the quantity of rice imported by ship at False Point was as much as could be utilized with the means at the disposal of the local officers and of the Relief Committee. In October, however, the supply of imported rice was almost entirely stopped, owing apparently to misunderstandings between the local officers and the Board of Revenue; only one ship brought a cargo of rice, which however afforded most opportune relief. The sales of rice to the famished people had to be put an end to for want of grain; but gratuitous relief was not checked, as the stocks in hand happily sufficed to maintain (though with great difficulty) the feeding centres; and though in some parts of the country the stoppage of sales was very much felt, in

others the market was somewhat eased in the course of October when some new grain became available. In November the new crop began to come into the market in considerable quantities, and then the general famine may be said to have come to an end. The people returned to their avocations, leaving only the emaciated, the orphans and the widows. Considerable distress, however, still existed in the unfortunate tracts which had suffered of second calamity by the floods of August, particularly in the Kendrapāra sub-division; and in these, relief operations were continued for some time longer.

Owing to the protection afforded by the irrigation works; no famine has occurred since 1866, though there was some scarcity Scarcity of
1896-97

in 1897 in consequence of a flood of great height and of unprecedented duration followed by short rain in September and an almost complete failure of the monsoon in October 1896. All these great rivers rose almost simultaneously to nearly the highest level on record, overflowing their banks or breaching the embankments. They submerged the low lands, which remained water-logged for more than a month owing to the long duration of the tide in the rivers; and not only was the crop ruined, but much land injured thrown out of cultivation by the deposit of sand. On the occurrence of the floods the cultivators replanted as soon as possible, but the next sowings were sacrificed to drought as the old ones huddled to flood. The drought was also of long duration, the rain having ceased at the end of September; in some places the winter rice crop, which is the mainstay of the district, failed from dryness, and in others the harvest was very poor. In the event, the output of rice was estimated at 7 to 8 annas of a normal

crop, and allowing for the stocks in hand and the output of the wheat crops, the deficit to be supplied by imports was put at 10 lakhs of maunds. The affected area was 1,360 square miles, or more than one-third of the district, with a population of 624,840 souls, of whom distress existed more or less throughout the whole district, and relief had to be given in all the sub-divisions from the middle of March to the end of September 1897. The District Board started relief measures, but it was soon discovered that the circumstances were not such as to justify expenditure by the District Board or by Government, and the grants already made by the Board were thenceforward replaced by contributions from the Indian Charitable Relief Fund and from the Court of Wards as Fund in Kanika and Kujang. Relief was given gratuitously in the shape of grain and money-doles, except in the Kunda-Majapur circle, where arrangements were made to take from the able-bodied recipients of relief such light work as paddy-husking,

rope-making, cotton-spinning and cloth-weaving. In the end, though there was considerable local distress, very little relief was found necessary, and the total expenditure amounted to only Rs. 18,718.

FLOODS.

During last century, Cuttack frequently suffered from inundation, and though defensive works in the shape of embankments along the rivers prevented the devastation of the district, a large proportion of the immense volume of water concentrated on the delta periodically spread over the country. Since 1830 floods of a serious character have occurred no less than 22 times, viz., in 1831, 1834, 1848, 1851, 1855, 1856, 1857, 1862, 1866, 1868, 1872, 1874, 1877, 1879, 1880, 1881, 1885, 1892, 1894, 1895, 1896 and 1900. It would be a mistake, however, to suppose that the floods are always destructive. They undoubtedly do harm in many ways, and the greatest of them have caused widespread havoc and destruction; but provided that they are not of long continuance or of great height, and that they come pretty early in the season, these inundations are productive of almost as much good as harm, as they are usually followed by excellent harvest. In many places the receding waters leave a fertilizing deposit of silt, which renews the productive powers of the soil and is of much benefit to the crops; and even the highest floods are of service, as their scouring action results in the clearance of silt on a large scale, and thus increases the capacity of the discharge of the various channels. It is only when their duration or height is extraordinary or when they occur so late as to render re-sowing impossible that very serious and widespread damage is done.

Flood of 1855.

With the possible exception of the flood of 1834, the highest flood of which we have any authentic record is that which occurred in July 1855, when the Mahanadi rose to an enormous height and the maximum reading (127.13) on the Lalbagh gauge was recorded. The embankments were breached in no less than 1,365 places, and besides the terrible losses sustained by the people in the submerged tract, 52 square miles were reported as being permanently left waste for fear of inundation. Fortunately, however, the flood fell as quickly as it rose, and though a submerged nearly the whole district, it did not cause nearly as much damage as a protracted flood would have done.

Flood of 1866.

So far as the effect on cultivation is concerned, the duration of a flood is almost of more importance than the maximum rise, and the period of the season at which it may occur is of even more importance. For this reason, the flood of 1866 was more disastrous than that of 1855, as though it was not so high, it continued much longer; and to add to the distress, it came at that critical

period of the year when the people were relying on the early rice crop to mitigate the sufferings caused by famine. This inundation broke through the Government embankments in 413 places, and of the 35 embanked rivers, not one was uninjured. Out of 90 *parganas* only six escaped from the flood; 612 square miles were submerged during a period varying from 3 to 60 days, the depth of water being from 3 to 15 feet; and a vast population of nearly 700,000 people are said to have been thrust out of their homes. All the crops were destroyed in the parts affected most seriously; property which had escaped the famine was carried away or destroyed, absolutely nothing was saved, and what the drought had spared was engulfed in the wide vortex of water.

The next great flood was that of 1872, which was very nearly ^{Flood of 1872.} though not quite as high as the flood of 1855. In Cuttack 1,135 square miles were inundated, and in Puri 1,070 square miles; of these 2,205 square miles, about 600 miles were under water for 14 to 17 days, and the rest from 7 to 10 days. Cuttack town was cut off from all communication with the surrounding country and was in imminent danger, being only saved by the energy of the local officers. The canals and embankments were seriously injured, and the country was a vast sea of water stretching from Cuttack to the coast, dotted here and there with a few village sites, where the people and cattle found a temporary shelter and huddled together in the greatest distress. Fortunately, this flood occurred early in the season in the first week of July, and as the subsequent season was favourable, a good crop was obtained from most of the land inundated, and no marked distress was caused.

In more recent years the most serious floods have been those ^{Flood of 1892.} which occurred in 1892 and 1896, the first of which was remarkable for its intensity and the second for its long duration. The flood of 1892 was due to the Mahanadi being swollen to a great height by heavy rainfall, the level at Narāj on the 26th feby being 92·10 and at Bellevue on the Kātjuri 88·30, the level above which the Mahanadi may be considered to be a high flood is 88·00 at Narāj, and the river was above this level for only 5 days as against 8 days in 1872. Consequently, the injury to the crops generally was not very serious; and though the embankments in the Puri district were breached in all directions, the damage done in this district was not nearly as great. The Kendrapāra canal was, however, breached in the 19th and 20th miles, and the Kendrapāra Extension canal from Marsāghāi to Jambu was also overtopped and breached in many places.

Flood of
1896.

In the flood of 1896 the Brāhmanī and Baitaranī as well as the Mahānadi rose to a great height almost simultaneously, but the main feature of the flood was its long duration, which exceeded that of all the floods of which we have any record. For 15 days, *i.e.*, from the 24th July to the 7th August, the Mahānadi was continuously above the level of 88·00 at Narāj, except for a few hours on the 2nd August; and on the 25th July it attained its greatest height, 92·10, or the same height as was reached by the floods of 1872 and 1892. The embankments were breached in numerous places, and the Kendrāpāra Extension canal, standing out like the bank of an inland sea, suffered much from the erosion of the waves breaking on it, and was again wrecked. In almost all the parts unprotected by embankments the heavy floods destroyed the *bhados*, and winter rice crops, and extensive tracts lay under deep water for many days. Some lost their lives and property, and there was considerable distress in all the country open to the ravages of the flood.

CYCLONES.

Cyclone of
1885.

The most terrible cyclone from which the district has ever suffered was the False Point cyclone of 1885, the memory of which is still fresh among the people. It presented two peculiar features, as it occurred during the monsoon months and was of very narrow area, though of unusual severity. The cyclone burst upon the coast in the early morning of the 22nd September 1885, the barometer falling to 27·135" at False Point Light-house, a reading unprecedented at the level of the sea. It was accompanied by a storm-wave rising to a height of about 22 feet above mean sea-level, which at once submerged the village of Jambu at the terminus of the Kendrāpāra canal to the north-west of False Point, and then rolled on in a north-easterly direction till it lost itself in the Brāhmanī river. The storm was most keenly felt in the Jājpur and Kendrāpāra sub-divisions. In the former sub-division, no less than 2,447 villages were affected and near 50,000 houses were destroyed; about 300 human lives were lost by falling trees, walls and homesteads, and 2,973 cattle were killed. The Executive Engineer's house at Akshuāpadā was entirely wrecked, the roof bodily carried away, and some of the masonry pillars destroyed; the Europeans (one a lady), who were in the house at the time, were driven outside, and were for some hours exposed to the violence of wind and rain. In the Kendrāpāra sub-division about 5,000 persons were drowned and 10,000 cattle were lost, 7,000 of these belonging to the Kaldip and Karara *parganas*. These *parganas* included 290 villages with a population of about 26,000 persons, and suffered more severely than any other

parts of the district, a total area of about 250 square miles being submerged. Eleven villages were completely swept away, every man, woman, and child being drowned by the storm-wave, and all trace of the houses being washed away; while about 150 more villages were levelled to the ground, though a considerable part of the population managed to escape. The land lying between Rājnagar and the sea face, which before the cyclone was perhaps one of the best rice-growing tracts of the Kanikā estate, was converted into a brackish waste; and in Kaldip all, and in Karara three-fourths of the crops were completely destroyed. By far the greatest havoc, however, was caused on the sea face; here the storm-wave sweeping over False Point Harbour, knocked down all the houses before it, and completely submerged Jambu as it rolled on in an unbroken wave over Kaldip and Karara. The effect of this wave was suddenly to create a sufficient depth of water all over the harbour to float large steamers over shoals where ordinarily there is a depth of only a few feet of water. The sudden fall of the water landed the ships and steamers which had drifted from their moorings on the shoals; while the cargo barges were deposited in the midst of the jungle and in the most extraordinary places, the boatmen having no command whatever over their boats, and being unable to distinguish, amidst the wild waste of water, the creeks from the submerged land. At Jambu itself, out of a population of 130 souls in the village, only about a dozen were saved; the village site, when first visited, was covered with the corpses of men, women and children, while the dead bodies of cattle and deer were floating in great numbers in the creek before the village. Between Jambu and the Brāhman, all along the Hansua creek, the scene was one of perfect desolation, with trees uprooted and houses crushed into a confused mass, and with hardly any signs of animal or human life whatever.

Immediately after the disaster the Commissioner and officers of the district staff visited the devastated country and distributed food to the survivors. Relief measures were at once started, depôts being established at Hansua and Rājnagar, at which charitable relief was administered to about 8,000 persons daily. A grant of Rs. 20,000 was made by Government for this purpose, and another grant of the same amount was sanctioned out of the funds of the Kanikā Ward's estate for charitable donations to the ryōts. The villages which were not utterly destroyed recovered from the effects of the storm with remarkable rapidity. Trade was for a time suspended, whilst the inhabitants set to work to repair their homesteads; but within a short time few vestiges of the destructive character of the storm remained.

In many of the villages, however, some of the distinctive castes were completely exterminated ; so that there are now several *bastis* in which there are no members of those castes whose presence and services are indispensable to a village community.

Cyclone
of 1890.

The last disaster of this kind which has visited the district was in 1890, when a storm-wave affected a considerable part of the Kujang estate, which, since the tidal wave of 1885, had been more or less subject to the inrush of sea-water every year. Matters, however, reached a climax in June 1890, when another wave passed over this portion of the estate, completely destroying the crops in a tract extending from the Keābāg to Gaguā. Here the standing crops were swept away, all the tanks and wells were filled with brackish water, and the supply of food-grain was all but exhausted. Four months after this tidal wave, it was reported by the Manager of the estate that nearly nine-tenths of the people in the affected tracts had no grain in their houses, and had no means of purchasing it. The severity of the distress was all the more keenly felt, as the people had already sustained grave losses in the previous year, when rinderpest carried away more than 75 per cent. of their cattle.

CHAPTER VIII.

RENTS, WAGES AND PRICES.

THE rents paid by the cultivators vary throughout the district according to the quality of the soil they till. The common rate for average rice land is Rs. 3-2 an acre, but good river-side land with a rich deposit of silt, on which tobacco and other valuable crops can be grown, pay as much as Rs. 12 to Rs. 25 an acre; and on the other hand inferior land producing a coarse pulse pays less than a rupee per acre.

The rents fixed at the last settlement were not, however, based on the classes of soil under cultivation, as it was found that the villagers were not able to point out, with any degree of accuracy or certainty, definite tracts of lands bearing a uniform rent; and, in these circumstances, the attempt to classify soils by the aid of existing rates of rent was unsuccessful and had to be abandoned. Eventually, it was decided to assess rents on the basis of the existing rates; the basis of the proceedings adopted being the proposal of a fair rent by the Settlement Officer, whether the existing or an enhanced rent for the acceptance of the tenant, the immediate settlement of that rent if accepted by him, and the formal settlement of a fair rent under the provisions of the Bengal Tenancy Act in all cases in which the tenant proved unwilling to accept. The method was simple and involved as little disturbance of the *status quo* as was possible; it avoided the dangers inseparable from systems of soil mapping and the risk of inequalities of assessment due to the idiosyncracies of individual officers; and it was open to any person dissatisfied with the rent proposed to apply for the settlement of a different rent, and to adduce formal evidence in support of his contentions. Under this system, fair rents were settled for the whole body of tenants in the temporarily-settled estates; altogether 650,600 holdings with an area of 822,500 acres were thus dealt with, the average rent throughout the district being Rs. 2-8 per acre.

At the settlement of 1837 the average rent of the *thāni* ryots, i.e., the resident cultivators, who held 21·5 per cent. of the assessed area, was Rs. 2-13-3 per acre, while the incidence of the rents of *thāni* and *pāhī* ryots.

the *pāhi* or non-resident ryots, who in most cases were practically tenants-at-will, was Re. 1-14-6. The area of the latter holdings was over 43 per cent. of the whole assessed area, and the rents paid by them, which have always been more or less competition rents, reflect with much accuracy the general conditions obtaining at the time. With regard to these two classes of tenants, who form the bulk of the cultivators of the district, it was decided that the existing rents of the *pāhi* ryots should as a rule be taken as fair and equitable, and that, if the *thāni* rent was less than the village rent, it should not ordinarily be enhanced by more than half the percentage of the difference between the two. The village rate was calculated on the basis of the *pāhi* rents, and the latter, being competition rents, were thus accepted as the standard of the limit of enhancement.

Thāni
ryots.

The *thāni* holdings having been held at the same rent since the date of the last settlement, the rents were enhanced wherever they were found to be lower than the *pāhi* rents; but owing to the over-assessment of *thāni* lands in several tracts, it was frequently found that even competition rents had not risen above the rents fixed for them during the currency of the settlement. In these tracts no general enhancement was made, but the excess area was everywhere assessed to rent at the village rate, after making an allowance of 10 per cent. to cover any excess due to the greater strictness of our system of measurement. It is a significant fact as showing at what high rates the rents of *thāni* ryots were fixed at the last settlement, that the general incidence of the rents of *pāhi* ryots did not, even in the course of 60 years, rise to that shewn by the *thāni* rents fixed in 1837. This would not in itself be conclusive evidence as to the over-assessment of *thāni* lands at the previous settlement, as it is to some extent true that these privileged tenancies frequently included the best lands in the villages, but it is borne out by the figures which show how materially the area held by *thāni* ryots and the rents paid by them diminished in spite of the valuable privileges conferred by the *thāni* status. In the event, the average incidence of the rent settled for *thāni* holdings was Rs. 2-14-5 per acre, and for *thāni-pāhi* or mixed holdings Rs. 2-10-10, the enhancement on the existing rent being 6 and 5·4 per cent. respectively.

Pāhi ryots.

The general development of the district had naturally been accompanied by an increase in the rents of the *pāhi* ryots, the only class for whom rents were not fixed for the term of the previous settlement. The zamindārs had consequently enhanced them considerably during the currency of that settlement; and as they were held throughout the new proceedings to be competition

rents, they were not liable to any general enhancement. They were, however, enhanced on the ground of excess area or where any particular rents were found to be unreasonably low, either through collusion or fraud, or because they were specially granted as beneficial rents by the zamindars. The average rent finally fixed was Rs. 2-13-7, the enhancement on the existing rent being 5 per cent.

Among other classes of tenants whose rents were settled may be mentioned the *jamābandi kharidādārs*, *tankidārs*, *chāndinādārs*, *nisfi-bāziāftidārs* and *kāmil-bāziāftidārs*. The *jamābandi kharidādārs* are the holders of land which, in theory at least, was formerly reclaimed. At the previous settlement they were treated as subordinate proprietors, their rents being calculated at a certain percentage of the assets they received; but at this settlement they were dealt with as tenure-holders under the Bengal Tenancy Act, and their rents were settled accordingly, a percentage equal to that granted to them at the previous settlement (20 to 30 per cent. of the full rent) being deducted from the gross assets of each tenure. The incidence of the settled rate per acre was Re. 1-8, the enhancement being 62 per cent. The rents of the privileged tenants known as *tankidārs*, or holders of small areas permanently assessed at a quit-rent, which averaged annas 3-2 at the previous settlement, were not disturbed, but the excess areas held by them were treated in the same way as those held by revenue and rent-free holders, *i.e.*, they were assessed to rent and settled with them as ryoti holdings. No general enhancement was made of the rent of ryots holding *chāndinā* tenancies, *i.e.*, the holders of homestead lands, the incidence of which was Rs. 3-15-10; but excess areas were assessed to rents at special rates, thus causing a nominal enhancement. The *nisfi-bāziāftidārs*, or holders of resumed rent-free lands, had been assessed at the previous settlement at half rates, and the *kāmil-bāziāftidārs*, or holders of resumed rent-free lands, at full rates. Both these classes were dealt with as ryots whose special privileges had expired at the last settlement, but in consideration of the very low rents at which they were holding, and to prevent the hardship which would have been caused by too sudden an enhancement of those rents, a strict limit was imposed on the enhancement; and they were eventually assessed to rents much below those paid by *thāni* and *pāhi* ryots. The incidence of the settled rent per acre in the case of *nisfi-bāziāftidārs* was Re. 1-1-5 and of *kāmil-bāziāftidārs* Re. 1-5-4, the enhancement being 189 and 55 per cent. respectively. The increase of the rents of the former, which is *prima facie* extremely large, is due to the fact that these people, who had been given holdings at what were supposed

to be half rates, were found to be paying what were really pepper-corn rents. The rents fixed by the settlement officers are but little more than a rupee an acre, which is less than half the market value of the land.

General
result of
the settle-
ment of
rents.

It was obvious from the circumstances of the case that the rents of a very large number of tenants holding at privileged rates, which had remained untouched for 60 years, would have to be enhanced, while it was known that cultivation had largely extended during the same period, and that there were considerable areas in the possession of both landlords and tenants that had never been assessed to rent or revenue. The general result of the settlement of rents was that the existing rents were retained in 54 per cent. of the holdings dealt with; in 13 per cent. an enhancement was made on the ground of excess area; in 24 per cent. an enhancement was made on other grounds; while 3 per cent. were reduced for loss of area, and 6 per cent. were tenancies newly assessed. The settled assets were altogether Rs. 20,72,900, or Rs. 2-8-3 per acre, as compared with Rs. 18,47,400, the assets existing before the settlement, and the increase was thus 12 per cent. This increase was, however, mainly due to the valuation of land held on nominal payment, the rentals of the *nish-bāziāftidārs* being raised from Rs. 35,700 to Rs. 1,03,200. The enhancement actually imposed on the important class of *thāni* ryots amounted to only 6 per cent. The rents of these cultivators had suffered no change for a period of 60 years; and though a large number disappeared in the famine years of 1865-66, it has been held that this is no reason why those who held their ground should be absolved from contributing some share of the large rise in the value of their produce which has resulted from State-constructed improvements and settled government. As already explained, they had from the first been paying highly, and it was considered that their existing rents were fairly adequate; but evidence to the contrary appears to be afforded by the fact that there was an enormous increase in the number of transfers of these holdings as soon as the settlement proceedings were commenced, and that since their close sales and mortgages of holdings and portions of holdings have become very common.

PRODUCE
RENTS.

Rents in kind are still paid for a certain proportion of land. The commonest form of produce rent is that known as *dhukibhāg* (literally, a sharing of the dust), which implies an equal division of the grain as well as of all bye-products. Under this system the entire cost of cultivation is borne by the tenants, and when the crop comes to maturity, it is reaped in the presence of the landlord's agent and is carried by the tenant to the threshing floor,

where an equal division is made in the presence of both parties. Sometimes, however, instead of the crop being actually divided, it is appraised on the ground, and half the estimated value in cash is taken by the landlord as his share. A less common form of produce rent is that designated *phatbhāg*, i.e., a division of the fruits and grain only, the straw and other bye-products being retained by the cultivator. The statistics obtained during the last settlement for 450 villages show that these systems of rent payment obtained in 4,563 acres, or 1·7 per cent. of the area; and from this it may be deduced that in the whole district rents in kind are paid for about 20,000 acres. It is estimated that in the case of ordinary rice land, the landlord's share is about 8 maunds of paddy, worth Re. 1 to Re. 1-4 per maund at harvest, so that the rent actually paid would be equivalent to Rs. 8 to Rs. 10 in cash.

Besides the *dhulibhāg* and *phatbhāg*, there are two other classes of produce rents, the *panidhān* and *sanjā*. The former is an arrangement by which a portion of a cash rent is payable in kind, e.g., a tenant with a nominal rent of Rs. 4 may have to pay Rs. 3 in cash and Re. 1 in grain. The landlord fixes the rate, so that the tenant generally has to pay something more than he would obtain for his grain in the open market. *Sanjā*, i.e., a contract, is a term applied to the payment of a fixed quantity of agricultural produce. The latter generally amounts to about 6 maunds per acre, which would fetch Rs. 6 in a good year and Rs. 9 in a bad year. The quantity fixed has to be paid whether the season is favourable for the ryot or the reverse, and the rent thus presses most heavily on him when he is least able to afford it. Fortunately this system is very rare in Cuttack.

Statistics of the wages given for certain selected classes of labour and the rates current for the decade 1893—1902 will be found in the Appendix. It is of some interest to compare these wages with those current in 1805, when sawyers, stone-cutters and tailors got Rs. 4, bricklayers, blacksmiths, carpenters, thatchers and syces Rs. 3, and grass-cutters, sweepers and other menial servants Rs. 2 a month. If hired by the month, ordinary male labourers received Rs. 2-8 and women and boys Re. 1-14; if paid by the day, the rate was 1 anna 10 pies for male coolies, and about one anna or a little less for boys and females. Sir W. W. Hunter found that between 1850 and 1875 all wages that were paid in money had risen by more than one-third, and that all wages paid in kind had remained the same. "The wages of agricultural day-labourers," he wrote, "are generally paid in kind, and do not seem to have altered since 1850. Such wages were then about twelve to fifteen pounds of unhusked rice per diem;

and the same rate continues at the present day, except when they are calculated according to the money value of the labourer's hire. All labour, however, paid by money wages has increased in price; and in the large towns, such as Cuttack and Jāipur, field work is now frequently paid in this way: Agricultural labour is always paid at a lower rate than other unskilled work. Day-labourers, other than agricultural, now receive from 1 anna 4 pies to 1 anna 6 pies in the rural tracts, and $2\frac{1}{2}$ annas a day in the towns; in 1850 the wages were three-fourths of an anna in the rural tracts, and 1 anna 6 pies in the towns. Smiths and carpenters now get $2\frac{1}{2}$ annas in the country and 4 annas in the towns; in 1850 their wages were $1\frac{1}{2}$ annas and 3 annas respectively. Bricklayers, who are only employed in the towns, earned $1\frac{1}{4}$ annas a day in 1850, and now receive from 3 to 4 annas. On the whole, it may be said that labour fetches double in the towns what it does in the country; and that, during the last twenty-five years, from 1850 to 1875, the rates of wages have risen from thirty-five to forty per cent."

On the whole, there has been a rise in the price of labour during the last 30 years, owing largely to such causes as the extension of the Orissa Canals, and more recently to the construction of the railway. The upward tendency is more noticeable in the towns than in the villages, and the increase of wages is more marked in the case of skilled than of unskilled labour. Away from his village, a carpenter now gets 6 to 12 annas a day, and a good blacksmith will not work for less than 8 annas and can even command 12 annas a day; while ordinary male day-labourers earn $2\frac{1}{2}$ to $3\frac{1}{2}$ annas, and women and boys $1\frac{1}{2}$ to 2 annas per diem. In his own native village, a skilled labourer gets from 4 to 6 annas, and an adult unskilled labourer from $1\frac{1}{2}$ to 2 annas a day; but the amount of the wages paid depends on the demand for labour, the nature and amount of the work done, and the size and position of the village, *i.e.*, whether it is in a remote and out-of-the-way tract or in the neighbourhood of a town. For making and repairing agricultural implements, carpenters and blacksmiths, who are still an essential part of the village community, are always paid in kind, the annual payment averaging about 9 seers of rice from every client; and when paid in kind the day-labourer gets varying quantities of paddy equivalent to 2 to $2\frac{1}{2}$ seers of rice. Measured by the quantity of grain given, there does not appear to have been any increase in the wages paid to agricultural labourers during the last 30 years; but owing to the enhanced price of food-grains, the money valuation of wages in kind has increased by 90 per cent. On the other hand, though the wages paid in cash have increased considerably, they have not

risen in the same proportion as the prices of the staple food-crops; and the condition of the town labourer has deteriorated, while that of the village labourer who receives his wages in kind has distinctly improved. Money wages are now slightly less in value than wages in kind; the latter are, therefore, always preferred by the village labourers, and it is extremely difficult to obtain a cooly in the mofussil who will work for cash wages in the sowing and reaping seasons, when wages in kind are freely given.

A statement of the prices current in each sub-division during the years 1893—1902 will be found in the Appendix. The enormous rise in the price of the staple food of the country which has taken place in the last century is sufficiently demonstrated by the fact that between 1811—1817 the price of rice averaged from 30 to 41 local seers (105 *toldas*) to the rupee according to its quality, while the average price of paddy was 90 seers to the rupee, and that even as late as the 10 years ending in 1856 the average price of common rice was as low as 58 standard seers (80 *toldas*) per rupee. There was then a sudden rise; in the next decade it was only about half as dear, being sold for 28½ seers to the rupee; and in the succeeding decades the price rose steadily to 27, 21 and 18 seers. The list of prices given in Toynbee's History of Orissa (Appendix III) shows that in the last 100 years there has been a very great rise in the price of agricultural produce, pulse, *ghl* and tobacco; cotton yarn and oil have cheapened, but on the other hand there has been but little change in sugar, salt, and the betelnut which every Oriyā chews. Thus the cultivating classes gain both on the better price they obtain for their surplus produce and the smaller price they pay for imported luxuries. The labourers in the villages have been equally benefited by the rise in the prices of food-grains, as wages are still paid in a great majority of cases either wholly or partly in kind. This system is particularly suited to an agricultural district like Cuttack, as it has the advantage of being unaffected by any rise in the price of food-grains; and the result is that whatever fluctuations may take place in the market, the labourers' wage remains the same.

The following account of the material condition of the people is taken from Mr. Maddox's Report on the Survey and Settlement of Orissa, 1890—1900:—"It is very difficult indeed to get any accurate understanding of the material prosperity of the people at large. Enquiries at once put the villager on his guard, and he makes such answers as he thinks will conduce to his gain, without any great regard for the truth. The general opinion of the officers

PRICES.

MATERIAL
CONDI-
TION.

who have for years worked among the people and gained their confidence is that 86 per cent. of the rural population are more or less permanently indebted to the *mahajan*, proprietary tenureholder, or zamindar. The remainder are themselves landed proprietors, or have other means of maintenance than agriculture. It does not, however, follow that because the villager is in debt and has no capital or savings to meet the strain of a bad season that he is very much to be pitied. The *mahajan* is almost always a local man, and generally the tenant cultivates the fields over which the *mahajan* has a lien. Again, the proprietary tenureholders are local men, and frequently have stocks of grain. Advances of grain for food and seed are not infrequently given by zamindars, especially in times of scarcity, and are repaid by return of the principal with 25 per cent. interest when there is a sufficient crop. Such conditions, however, become oppressive when for two years in succession there is scarcity. The Oriya cultivator is content with very little, and that he generally gets. A full meal of rice once a day, taken with a little salt, some pulse or vegetables, and perhaps fish, suffices him, and he eats cold in the morning what is left over from his evening repast. Animal food is a luxury, but well-to-do men eat a little mutton and goat's flesh, and all classes eat game whenever they have the luck to kill any. The poorest classes take, to supplement their rice, boiled *kulthi* and *mandia* cakes, and find a substitute for vegetables in the many herbs and grasses that grow wild, and it is very few indeed who cannot fill their bellies with food which, if not appetising, is certainly satisfying. If the harvest fails or supplies run short, the cultivator finds in the *mahajan* a banker always ready to advance money on good security, and able and willing to tide him over hard times, provided there is no abnormal general distress; and the history of the floods and drought of 1896 shows that the agricultural community can withstand very serious calamities, if the bad season is followed by a good harvest in the next year."

The difference between the two years 1865-66 and 1896-97 is very striking, and clearly illustrates the great improvement in the resources of the people which has been the result of the changes effected during the last half century. The years preceding the famine of 1866 had been a most prosperous era, distinguished by a great development of the exports, and the terrible distress that followed the drought of 1865 seemed to disprove the truth of the popular belief that the food-stocks left after a good year are sufficient to meet the wants caused by a single harvest's failure. The years 1890-95, on the other hand,

were marked by failure of rain and floods in 1891-92, and by heavy exports in subsequent years, which might have been expected to deplete the stocks in reserve; yet not only did the district escape famine, but it exported over 16½ lakhs of maunds of grain in 1896-97, though there was a great flood which destroyed the crops early in the year, followed by short rain in September and an almost complete failure in October, which resulted in a very short crop of the *sārad* rice on which the people mainly depend.

The actual requirements of the people are very few. Brass Dwellings. and bell-metal utensils and ornaments, coarse cotton cloth, and certain other articles manufactured for local consumption supply nearly all their wants, and they need very few such articles of foreign manufacture. The one mild luxury which is practically universal is that of smoking; the tobacco is smoked not in the hookah, but in the form of cigars, or still more economically, by being pulverized and wrapped up in a leaf. The house of an ordinary ryot is one of which the walls are made of mud, dug from some spot close by, with a roof generally consisting of a framework of split bamboos tied together by string and thatched over with straw or grass. The floor is smoothed over almost every week with cow-dung and mud, and the walls are decorated with fantastic figures of crude design and glaring colours. Even the house of a substantial ryot, comprising a sitting room, a bed-room for males and another for females, a treasure-chamber, a cowshed and a sanctuary for the family idol, besides a large court-yard, verandahs, etc., would not cost more than Rs. 100. The furniture is equally simple, and the articles which the cultivator requires for himself are extremely few. Most of the furniture in the house of an ordinary ryot are articles required for his work, such as mats for drying paddy, and baskets and earthen jars for holding grain. For his own comfort he has merely a few mats for sleeping on, a basket in which to keep his clothes, and a small plank to serve as a seat; though mats give place to wooden beds and cane baskets to boxes of wood or tin in the houses of the wealthier ryots. On the other hand, the peasant is anxious to have a good stock of kitchen utensils and buys as many as he can afford; but all the vessels necessary for domestic use, whether of brass, bell-metal, iron, wood or earthenware, can be purchased for Rs. 12, and even a well-to-do ryot can get all he wants for Rs. 50.

He is equally eager to give his women folk as many ornaments as his purse can supply, and the female members of his family deck themselves out with a large variety of bracelets, armlets, anklets, hairpins, and rings for the ears, fingers and toes.

But though the number of ornaments worn by peasant women is very large, their intrinsic value scarcely exceeds Rs. 5, as they are generally made of cheap materials, such as glass, lac, bell-metal and brass. It is only the wealthier ryots who can manage to give their wives gold and silver ornaments, and the value of the jewelry they wear is about Rs. 80*.

Though keenly alive to the advantages of jewelry as a setting for their charms, the women are content with a poor wardrobe. The universal garment is the *sāri*, a long piece of cloth draped over the head and shoulders, which is tied at the waist and reaches down to the knees. They generally have only two of these cloths, costing about Rs. 3; and though a substantial cultivator's wife has more cloths of a better quality, the total expenditure is not more than Rs. 30. The man himself generally wears a *dhoti* and a *chādar*, or loose cotton sheet, worn over the shoulders; and in the fields he is content with an exiguous rag, called a *gāmchhā*, round his loins, and with a wicker shield-like hat to protect him from the weather. His outlay on clothes is not extravagant, as an average peasant's outfit both for ordinary wear and for festive occasions costs less than Rs. 4, and his rich neighbour's clothes can be got for Rs. 30.

Indebted-
ness.

On the subject of the indebtedness of the ryots, Mr. Maddox writes:—"If we except well-to-do ryots holding themselves 8 or 10 acres or more of land, there are few cultivators not in debt to the *mahajan*. Enquiries made by the Assistant Settlement Officers have not resulted in much definite information, but it appears to be well established that the petty cultivator pays away as rent and interest the whole of his crop, except what is left to him for subsistence allowance, and has almost always to borrow again before the next harvest is ripe. In a good year he will pay his debts and rent in full in January or February, and have enough to carry him on throughout the year, if he has no unusual charges to meet, but he will probably seize the opportunity to marry off a son or daughter, which may leave him in debt to the extent of Rs. 50 for which he will probably execute a mortgage on his land or a portion of it. In bad years payment of rent and loans will not leave the cultivator enough to eat, and he will probably borrow again in June or July enough to carry him on to the end of the year. Most of the money, or rather grain, lending in Orissa is in the hands of zamindars or proprietary tenure-holders, and they are by no means hard creditors. Very occasionally a bad tenant gets sold up, but as a rule the zamindar knows that it is to his interest to keep his ryot going, and will supply him on the usual terms with the necessary grain, even though there be a large accumulated

debt. As security he nearly always requires a bond pledging the land, but these are not often used, and sometimes even particulars of the land and of the consideration are not filled in. The only matter in which I have known ryots to show any providence is that of preserving grain for seed, and several instances were brought to my notice in 1897 where the cultivator, though reduced to great straits for food, getting practically no rice to eat, refused to touch his little seed-store."

In spite, however, of their indebtedness and of the liability of their crops to injury from droughts and floods, the agricultural classes have more resources than any other. Not only have they better means and better credit than the labouring classes, but being in the habit of keeping grain for home consumption, those who have crops of some kind are in a better position than the non-agricultural classes when grain is scarce and prices are high. In the course of the last settlement it was ascertained that the average area of a holding in Cuttack is $1\frac{1}{4}$ acre, which is at first sight a very small amount; but a ryot often holds land in more than one village, and from the statistics of 25 typical villages, it was found that out of 100 heads of families, 56 held over 2 acres each, 30 held 2 acres or less, and 14 had only homesteads. The latter were for the most part labourers; those holding 2 acres or less were artisans, weavers and others, who combine agriculture with their hereditary occupations; and the average holding of the agriculturist was found to be 3.23 acres, and of the whole population 2.21 acres per head of a family. It has been calculated that a quarter of an acre of homestead land with 3 acres of irrigated or $3\frac{1}{2}$ acres of unirrigated land would support the ordinary agricultural family of five on a subsistence allowance of food; but the regular income derived from the land is supplemented by the income obtained from subsidiary occupations as well as from the remittances sent home by those members of the family who live out of the district, most of whom are in service and earn good pay. The statistics which have been compiled show that in any ordinary year there must be a considerable excess of production over consumption, and that, after allowing for the amount required for seed, the outturn of food-grains leaves nearly three-fourths of a seer per head.

As regards the labouring classes, the village artisans who never go out of the village form a recognized part of the village organization, and are indirectly supported by agriculture. The ordinary artisan with a family of five earning 7 annas a day does not spend more than 5 annas, and is thus able to lay by something which enables him in time to invest his savings in land, the great

Condition
of the agri-
cultural
classes.

Condition
of the
labouring
classes.

ambition of every man in Orissa. There is hardly any really skilled artisan, who has not, if he is a man of the mofussil, some land, and if a man of the town, some money-lending. Here, however, as in other parts of India, the lot of the day-labourer is rather hard. Spending what he earns from day to day, he has very little to pawn or sell in times of distress, and he is therefore the first to succumb in time of scarcity unless he is carefully watched and given work within easy reach. Unlike the Bihâri, the Oriyâ does not move with his family in search of work, and no labourer cares to go to a distant place for employment leaving his family uncared for and with the prospect of only earning enough for himself. The *kuthiâ* or *haliâ*, i.e., the unskilled labourer who is engaged by the year and paid daily in kind, is a little better off than the day-labourer. He has a better man to look after him, who, if an old master, does not forsake him till he is himself reduced to the very last straits; and besides this he generally is allowed to hold about half an acre of land as *jâgir*.

CHAPTER IX.

OCCUPATIONS, MANUFACTURES AND TRADE.

In Cuttack, as in other parts of Bengal, a large majority of the population are engaged in agricultural pursuits, and the number of those who obtain their livelihood from other sources is comparatively small. Agriculture supports 58·5 per cent. of the population, industries 18·3 per cent. and the professions 2·6 per cent.* Of the agricultural population, 31 per cent. are actual workers, of whom 19,000 are rent-receivers, 327,000 rent-payers and 22,000 field-labourers. Of the industrial population, 55 per cent. are actual workers, and these include 15,000 cow-keepers, 16,000 fishermen and fish-dealers, 19,000 rice-pounders, 14,000 firewood- and charcoal-sellers, 33,000 cotton-weavers and spinners, 5,000 gold and silversmiths, 3,000 ironsmiths, 3,000 carpenters and 12,000 basket and mat-makers. Of the professional classes, 37 per cent. are actual workers, including 3,000 priests, 6,000 persons employed in temple service, 1,000 astrologers, 4,000 teachers and 2,000 musicians. Among those engaged in other occupations are 22,000 herdsmen, 13,000 beggars and 98,000 general labourers. Large, however, as is the ratio of agriculturists, this figure does not convey a strictly correct idea of the number of persons engaged in agricultural pursuits. In Cuttack there is scarcely a single caste that does not live by cultivation, even though it may not be the principal or only means of support. Brāhmans, who are interdicted from touching the plough themselves, employ labourers to till their lands; boatmen, fishermen, washermen, barbers, shepherds, cowherds, potters, weavers, oilmen, etc., while carrying on their respective caste avocations, cultivate some land at the same time; and it is probable that the actual number of those who obtain either the whole or part of their income from the soil is considerably larger than the figure quoted above.

With the exception of the silver filigree work of Cuttack, the industries of the district are of little importance. As is only natural in a district where the great majority of the people are engaged in agricultural and pastoral pursuits and where the urban population is small, the bulk of the industrial community are

engaged in supplying the simple needs of rural people. The people require very few articles of foreign manufacture; and brass and bell-metal utensils, coarse cotton cloth, and certain other articles manufactured for local consumption, such as woollen blankets, paper, pottery, etc., meet most of their wants. In the interior the artisans who make these articles form a component part of the village organization, some of them still holding service lands for their work; and even in the towns the manufactures are mostly of a primitive kind producing little for export.

Gold and
silver
work.

Cuttack is one of the few places in the Province in which gold and silver work is carried on. This industry gives employment to about 400 families in Cuttack town and to 2,000 families in the interior. The instruments used are of the simplest kind and the equipment of the workshop is equally primitive, as a small hole in the mud floor which serves for a furnace, an earthenware bowl, and a couple of fans without handles generally form the whole apparatus of the workmen. The artificers, patiently working by a trying light in ordinary earth-paved huts with these crude implements, turn out articles of extreme delicacy and finish, and often of exquisite design. The majority are ornaments intended as tributes to feminine vanity, such as *alakās* for the forehead, hair-pins with four or five chains suspended from them, strings of flower-buds worn round the hair, and numerous kinds of ear-rings, some for the lobe, others for the side, and a third class for the upper portion of the ear, besides a number of ornaments for the nose, the neck, the wrists and arms, the waist and ankles. To this list must be added a long catalogue of silver fancy articles and ornaments of filigree work which are usually kept for sale in the Cuttack market. Some of these are vessels used at religious festivals and on ceremonial occasions, such as the rose-water vases or sprinklers brought into use at weddings, nautch parties and other festivals, and the *attardāns* and silver platters for betel-leaf which are handed round at *darbārs*; in addition to these, there are various articles of a more modern character, such as cigar-cases, card-cases, picture-frames, buttons and studs, figures of animals, flower-vases, etc.

The crude material consists of gold with an alloy of silver and copper, and of silver alloyed with copper. The molten alloy is poured into a mould, and the bar thus produced is beaten on the anvil into a thin rod. The latter is then passed through the holes made in the *jantā*, i.e., an iron plate perforated with holes varying in size. The thick wire obtaining by drawing the metal through the larger holes is gradually made thinner by being drawn through the smaller holes, some of which are about the size of a

pin's head, while others are no bigger than a pin's point. This process is continued till the wire becomes finer and finer, and the requisite diameter is at length obtained; in this way 120 feet of wire can, it is said, be drawn from a rupee's weight of silver. The wire is then cut up into the lengths required, bent and coiled into various shapes, and then arranged according to the design of the work on a piece of mica placed over a tin plate. When the different kinds of wire have been arranged and the design has been filled in, they are soldered together and the mica and tin plate are removed. The article is then coloured and burnished, a paste of salt and alum being put over it, and after being dried it is ready for sale. The finest articles are produced in the Orissa Art Wares factory, the proprietor of which, Mr. M. S. Das, C.I.E., had brought the improved methods of modern mechanism to the assistance of the hereditary training and skill of the native artist. In purity of design and delicacy of finish the articles turned out in this factory surpass the gold and silver work in every other part of the Province, and the graceful skill with which the spider-web of wire is manipulated has made Cuttack justly famous for this kind of work. No accurate information as to the quantity of gold and silver used is available, but about Rs. 1,00,000 worth of gold and about Rs. 3,25,000 worth of silver are imported into Cuttack annually. The gold and silver ornaments and fancy articles produced are exported not only to Puri and the Tributary States of Orissa, but also to Calcutta, Delhi, Bombay, Cutch, Bangalore, Akyab, Mauritius, and other places.

Formerly the manufacture of salt was a valuable industry, and Stirling has left it on record that the finest salt of all India was manufactured in the wild unhospitable tract along the sea coast of Orissa, and that under the monopoly system the East India Company obtained from this source a net revenue falling little short of 18 lakhs of rupees. In 1897-98 altogether 162,551 maunds of salt were manufactured, but the industry has now been ruined by the railway, which has encouraged the importation of the cheaper Madras salt. Salt manu-
facture.

Weaving is another industry which has suffered from competition with imported goods. When the English first came to Orissa, the fine muslins of Cuttack were eagerly bought up by the English factors; but owing to the preference of the people for cheap machine-made goods, the industry is now practically extinct. Weaving of cotton cloths is still carried on at Gulnagar, Jankoti and Kishornagar, and indeed in most of the villages in the interior; but the hand-made article has been driven out of the market in nearly every part of Cuttack by imported piece-goods, Cotton
weaving.

and the country looms are almost at a standstill. At the last census only 33,000 cotton-weavers and spinners were enumerated; many of the weaver caste have entirely forsaken their hereditary occupation and live solely by cultivation; and those who still work at the loom are forced to add to their income by taking service as labourers if they have not sufficient capital to rent land for themselves. Their manual labour cannot compete with European machine-made piece-goods either in fineness or cheapness of price. The cloth they turn out, though stronger, is much coarser, and is used only by the poorer classes, who manage to make one piece last throughout the year. Fine cloth is however still woven at Gulnagar from imported twist; it meets the local demand, and also finds its way into the shops of Cuttack, where it is bought by the richer citizens and still commands a fair price.

Silk weaving.

The weaving of *tasar* silk on a small scale is carried on in the village of Gopālpur in the Dharmshāla thāna. The silk industry, like the cultivation of the betel leaf, was introduced by a few Bengalis who emigrated to Cuttack from Burdwan or Midnapore. There are about 200 families engaged in the industry, who are the descendants of the weavers who settled here about six generations back. Almost every family owns a loom, and manages to obtain a fair income without having to take to any subsidiary profession. The process they follow is as simple as the scale of their business is small. They maintain no large filatures, possess no intricate or improved form of machinery, and use only the *tasar* cocoons which they obtain from the jungle tracts to the west. The *tasar* cloth which these weavers produce is of a coarse and inferior quality. The bulk of the outturn is taken by traders in Madras, Berhampore, and other places in Southern India, who make advances which are adjusted when the fabrics have been finished. The value of the cloth purchased by these merchants is reported to be about Rs. 12,000 annually, and a small quantity, valued at Rs. 500 a year, also finds its way to Cuttack.

Paper manufacture.

Paper was formerly manufactured by Muhammadans from the *chanpat* fibre, but the industry has declined owing to the competition with imported cheap paper of better quality. For a long time it lingered on, as the local *kachahris* and offices used the local paper, till it was superseded by the Bally paper. The seats of the industry were Kendrapāra, Asureswar, Hariharpur, and Padmapur, the last place being the chief source of supply for the Division. The industry would indeed have disappeared long ago were it not that owing to its durability the paper is still in demand in the Cuttack Collectorate, where it is used for the flyleaves of records. The demand is however small, and even the few families which

keep up the industry depend very largely on labour or eke out their earnings by trading in sheep and goats.

The other industries are few in number and of little significance. A small colony of stone-carvers settled at Naltigiri about 34 miles from Cuttack make images of gods and ornaments for temples in conventional designs; the industry is said to have been introduced by the Marāthās, but it has made no progress. Locks, nails, nut-crackers, etc., are made at Baroda and Kalāpadar in the Bānki thāna. The carpenters of Cuttack town have some skill in cabinet-making and a certain amount of wood-carving is still carried on. Formerly the temples, *maths* and large houses had the woodwork in their inner verandahs elaborately carved, while the doors and windows contained good specimens of lotus and geometrical screen patterns; but now there is very little carving done, beyond the grotesque designs of gods and fabulous beings which are carved on the panels of doors and on boats. In Cuttack the manufacture of toys and sticks from buffalo horns is a speciality for which there appears to be a growing demand. The horn is cut to the required length, turned on a primitive lathe, and then polished; these articles obtain a ready sale, but the industry is only on a very small scale and is confined to a few families. The only other indigenous industry which appears to prosper is the manufacture of brass and bell-metal utensils and ornaments. This has not yet suffered from the competition of foreign or machine-made articles, though gilt ornaments of German silver are said to find favour with many of the women on account of their lightness, cheapness and gloss. The vessels manufactured are exported to Puri, Sambalpur, Sonpur, Ganjām and Calcutta, and a thriving trade is carried on.

Other industries.

There are no mines in the proper sense of the word. Sandstone, laterite and rubble are quarried from the hills along the western border, but only for the railway and local use. The laterite found in the gneissose hills along the road from Calcutta to Cuttack is admirably adapted for building by its durability, and is commonly used for this purpose.

Mines.

The Government workshop at Jobra is the only factory in the district or indeed in the whole of Orissa. This is a civil engineering workshop with steam as the motive power, at which the iron and wood-work required for the anicuts, locks and canals are turned out; it employs an average of 173 operatives daily.

Factories.

From the fact that the first English factory in Bengal was established in this district, it is clear that it was at one time a place of some commercial importance. The first English expedition to Bengal set forth from Masulipatam in 1633; the party consisted

English factories.

of eight Englishmen, and the good ship, "Hopewell," that bore them was no better than a native junk. With favourable winds the expedition* managed to reach Harispurgarh, but soon after they arrived, a Portuguese frigate came in and anchored near them; and when the English went ashore, the master of the frigate "with the assistance of some of the ribble-rabble rascals of the town" set upon them, and the English "had like to have been all slain and spoiled, but that Lucklip, the *rogger* or vice-king there, rescued them with 200 men." Cartwright, the leader of the little band, soon afterwards set out with a valuable consignment of gold, silver, cloth and spices for Cuttack, where the Muhammadan Governor of Orissa held his court. Here he demanded redress for the Portuguese attack upon them and applied for a permit authorizing the English to trade in Orissa. The Portuguese captain also appeared however, and charged the English crew with fighting in order to make a prize of his vessel and take his goods by force. A nobleman of the court was bribed by the Portuguese and espoused their cause; and Cartwright, finding he could get no satisfaction, "rose up in great anger and departed, saying that if he could not have right here, he would have it in another place; and so went his way, not taking his leave of the *Nawab* or of any other; at which abrupt departure they all admired." At his next interview he found the Nawab in a far more favourable mood, and told him boldly with a stern undaunted countenance that "he had done his masters of the Honourable Company wrong, and by his might and power had taken their rights from* them, which would not be so endured or put up." The Nawab then made some enquiries about the power and trade of the English and was informed that their maritime strength was invincible. This reply made a deep impression on the Nawab and finally he gave the English permission to trade in Orissa. On the 19th May 1633 the English left Cuttack for Hariharpur, a village adjoining the present Jagatsinghpur; here they at once proceeded to build a factory, this site being chosen apparently because, to quote Bruton's account, "the town is very full of people; there are many merchants in it and great plenty of all things: here is also cloth of all sorts, great store, for there do belong to this town at least 3,000 weavers that are house-keepers, besides all other that do work, being bound or hired." This factory however was not long maintained, as the merchants did not understand the necessity for severe self-restraint and temperance in a hot climate; the country abounded with fruit and

* For a fuller account of the fortunes of this expedition, see the *Early Annals of the English in Bengal*, vol. I, by C. R. Wilson.

arrack, and these when taken with excess produced lamentable consequences. The place consequently acquired a bad name among the English, and its unhealthiness was one of the most serious obstacles to their progress. Trade was also crippled by the attacks of the Aracanese pirates and the opposition of the Portuguese; and to add to the difficulties of the English, the river where their vessels used to lie having gradually silted up, it became unsafe for ships to ride there and difficult to send goods by sea that way. In 1641 the factory at Hariharpur was found to be on the point of dissolution, only a few fine muslins were in preparation, and the trade henceforward was diverted to Balasore which possessed far greater commercial advantages.

We have little information concerning the commerce of the district during the 150 years which elapsed before the British conquest; but enough is known to show that the trade of the country was paralyzed by the oppressions of the local officials. However cheap might be the inland markets, the tolls and custom-houses on the roads and rivers made the goods too dear for exportation, and anything like internal trade was rendered impossible by the incessant black-mail which was levied. Besides the royal officers who imposed a tax at every few miles, each petty proprietor through whose estate the route lay lined the road with hungry myrmidons; and in the short journey of 103 miles from Cuttack to Balasore the tolls amounted to nearly a third of the total value of the goods.

The incursions and oppressions of the Marāthās soon put an end to whatever commercial prosperity Orissa may once have possessed, and the trade in rice and salt, which had survived Marāthā misrule, was considerably diminished when the Government asserted its right to the monopoly of the latter article. When we took the Province, however, considerable quantities of these articles were still exported from the ports, which were chiefly frequented by three kinds of craft, viz., (1) Maldivé yessels, which brought cowries, cocoanuts, coral, and dried fish, and took back rice and earthen pots; (2) sloops which carried the Government salt to Calcutta; and (3) sloops, built at Contai and Hijili, which only came in the cold season and carried rice to Calcutta. The Rājā of Kanikā carried on a considerable trade in rice on his own account, and large numbers of swine and horned cattle found their way by land to the Calcutta market. The export trade, however, gradually dwindled down to a fraction of its former importance, and in 1813, the Collector reported that the only articles exported were rice and a little salt (about three lakhs' worth), and that trade was hardly known even by name. The internal trade was equally

Trade
under the
Marāthās.

Trade
under the
English
rule.

limited and was confined to the supply of rice and other articles of every-day use or consumption to the larger towns, and to the mutual exchange of surplus produce and articles of home manufacture at the *hā's* or markets in the interior.

Then, as now, the grain markets in the towns were in the hands of middlemen, who so regulated the supplies coming into the town as to keep up prices. When the rivers rose to an unusual height, or the crops failed to any considerable extent, the difficulty which the inhabitants of Cuttack experienced in getting food was extreme. The military authorities were constantly representing to the civil officers the difficulties they had in getting supplies for the troops. They asserted that they had often to go without sufficient food for several days together, and declared that unless this state of affairs was remedied, the sepoys would lose all sense of discipline, and setting their authority at defiance, plunder the grain shops in the town of Cuttack. In consequence of these complaints, the Collector was authorized in 1805 to advance the sum of Rs. 10,000 for the purpose of purchasing and storing a supply of rice for the town of Cuttack and for the military or cantonment bazar. A godown was built for the storage of this large stock, and a public market established for its sale on the site of the present Chāndni Chauk. For many years after this, Cuttack continued to be in constant want of supplies and frequently on the verge of famine. Time after time urgent calls were made on Balasore for rice, and pilgrims had to be warned of the scarcity in the district and directed to supply themselves with provisions before entering it. There was however no scarcity 20 miles north of the Mahānadi; at Balasore rice sold at 65 seers for the rupee and there was enough in store for three years' consumption; there were immense stocks at Dhāmra and Churāman intended for export to Madras; and consequently it was thought that the scarcity of rice was not natural, but must have been artificially produced. It was pointed out that the large number of Marāthās still resident at Cuttack were bitterly hostile to the English, and did their best to stop the import of rice in the hope of starving them out; they themselves ceased to import from Sambalpur and they prevented the ryots, many of whom were still in their debt, from bringing in grain to Cuttack. This was all the easier, as the ryots had always been accustomed to give up nothing until they were compelled. The Marāthās took what they wanted by force, and the ryots did not understand our method of asking for and paying for what we wanted; they took it for weakness, and were so elated at their release from oppression that they thought themselves quite

independent and would do nothing to oblige any one. Besides this, even the *amils* were in league against the English, as they had for a long time taken advantage of their position to secure the lion's share of the profitable export trade to Madras, and did not wish to sell in Cuttack.

In order to remedy this lamentable state of affairs, land was offered rent-free in perpetuity to any merchants who would establish grain shops near the site of the public market. It was at this time, and in consequence of this offer, that a row of houses arose on either side of Chāndni Chauk, some of which exist in a dilapidated condition to the present day. But though this measure gave some relief to the inhabitants, its effect was only temporary; the usual tightness of the market was enhanced by severe droughts and by floods which cut off communication with the interior; and the officers of Government were constantly interfering with the market in order to try and force down prices. The Governor-General was at last forced to issue stringent orders prohibiting this practice, and in 1821 a proclamation was issued declaring the freedom of trade and the absence of all restrictions affecting the grain market. Since that time trade has steadily developed with the opening of new communications, which have placed nearly every part within easy reach of the markets. The roads have been improved and extended; a great impetus has been given to the extension of trade by the opening of harbours at False Point and Chāndbali; the district has been covered with a network of canals, which enable the people to transport their goods to the sea and to all parts of the interior; and more recently it has been tapped by the railway and put into direct communication with the mercantile capitals of Calcutta and Madras.

The trade of Cuttack, at the present day, consists chiefly in the exchange of agricultural products in their raw state for foreign manufactures, metals and articles of luxury. The chief article of export is rice which is sent to Calcutta, Mauritius and Ceylon, other exports being oil-seeds, hides, jute, timber, horns, feathers, bones, *panasi* grass, and silver filigree work. Jungle products, such as myrobalans, lac, nux vomica, wax, and resin come in from the Garjāts, and with the other articles mentioned above are despatched to Calcutta, and to a smaller extent to the Madras Presidency. English and Bombay piece-goods, kerosine-oil and specie are brought in from Calcutta and sent out again to Puri and the Garjāts along with dried fish and salt; and a portion of the consignments of cocoanuts sent from Puri is forwardd to the Garjāts.

Imports
and
exports.

The principal articles of import from Calcutta are English and Bombay piece-goods, kerosine-oil, crockery, glassware, specie, fancy goods, potatoes, lead, copper, zinc, gold, silver and cotton yarn. Most of these articles are consumed in the district, and a portion, as mentioned above, is sent to the Garjāts on the west and to Puri on the south. The articles imported from other places are salt, turmeric, chillies, sugar and tobacco leaves from Ganjām; cocoanuts and cocoanut-oil from Puri; wheat, pulses, oil-seeds, cotton and molasses from the Central Provinces; lac, nux vomica, myrobalans, silk cocoons, wax, resin, iron, horns, hides, timber, catechu, oil-seeds and feathers from the Garjāts. Cotton goods, besides being brought by sea from Calcutta, are also imported by land from some other parts of Bengal, and from certain districts of the Madras Presidency; the imports from Bengal consist of muslins from Midnapore, Bānkurā and other places, and those from Madras of fine cotton goods and silk fabrics sent from Ganjām and Berhampore.

Statistics
of trade.

Cuttack is primarily an exporting district, the exports greatly exceeding the imports, whether borne by rail, river, road, canal or sea. The returns of sea-borne trade passing through False Point show that the value of the imports in 1904-05 was Rs. 3,350, while the exports were valued at nearly 22½ lakhs; nearly all of this was foreign trade, the value of the goods carried by coasting vessels being only Rs. 76,800. The statements showing the volume of rail- and canal-borne traffic show clearly the increasing popularity of transit by rail; and although the canals continue to perform an important function, especially in the export trade, there can be no doubt that as a channel of trade they are being rapidly supplanted by the railway. The latter brought into the district 955,000 maunds and exported over 625,000 maunds of goods, while the canals exported 214,000 maunds and brought in only 31,700 maunds. The export traffic carried along the canals consisted almost entirely of rice, while the cotton twist and yarn brought by boat and steamers from Calcutta constituted nearly seven-eighths of the imports. The returns for rail-borne traffic show that among the imports salt from Madras (404,000 maunds) bulked most largely; a large portion consisted of rice (175,700 maunds) brought in from Puri, which was probably only conveyed into Cuttack on its way to other markets; and after this, the largest import was gram (75,000 maunds) from the Central Provinces. Madras is the largest importer, sending 4½ lakhs of maunds, and next come the other districts of Orissa with 205,000 maunds, and then Calcutta and the metropolitan districts with 169,000 maunds. Among exports, rice occupies the first place,

nearly 4 lakhs of maunds being exported in 1904-05, and the next most important export was gram and pulse (98,000 maunds); with the exception of paddy, the other exports are small in quantity and of little significance. Practically all the exports are sent to Calcutta and the surrounding districts, or the other districts of Orissa.

The export business in Cuttack is almost entirely monopolized by a few rich merchants, who are in a position to make large advances at favourable rates and to undertake the risk of sending consignments by sea. These merchants have their agents, who establish small depôts in various parts of the district and make large purchases of rice at the markets. They then send out their rice to the chief ports (False Point and Chāndbāli), whence it is shipped to foreign countries or to other parts of India. There are many traders, however, who carry on heavy transactions both in articles of export and of import: they are generally the Telis, Kewats, Guriās, Pātras and Golās of the district, but their numbers are swollen by Bengalis, Mārwaris, Bhojpuris, Telingās, and Garjāti Jaunliās, who with their greater industry and enterprise have managed to establish themselves to the exclusion of the Oriyās. These dealers (*mahājans*) make advances of money to petty tradesmen, known as *bepāris* or *gumashtās*, who go to different parts of the country, buying in at the cheaper markets and selling off to advantage at the dearer ones. At the close of the year, or of any other definite period of time, they return home, render an account of their transactions, and pay the *mahājan* the money they have borrowed, together with a share of the profits. The latter is divided between the *mahājan*, the *bepāri* and the owner of the boat or pack-bullocks used in conveying goods from one place to another.

Sometimes the *mahājans* have *kothis* or warehouses in different parts of the interior, where they station resident agents or *kothi gumashtās*, who are often near relatives of the *mahājans* themselves. Goods are bought and sold here, and are also sent off to the *mahājan*; at the end of the year accounts are settled, the profits that accrue from the year's transactions being divided among them. Some traders, besides dealing in all kinds of produce themselves, also serve as brokers or middlemen for the sale of miscellaneous goods, and are known as *dāndidōrs* (literally weighmen), *i.e.*, men through whose intervention purchases and sales are effected.

Many *mahājans* personally keep up wholesale or retail shops, at which they sell their goods either wholesale to peripatetic dealers, or retail to ordinary purchasers. These shops, which are found chiefly in Cuttack, at the sub-divisional head-quarters and